

## **REMARKS**

### **I. Introduction**

By the present Amendment, claim 1 has been amended. Claim 6 has been cancelled. Accordingly, claims 1 and 3-5 remain pending in the application. Claim 1 is independent.

### **II. Office Action Summary**

In the Office Action of November 23, 2009, claims 1 and 3-5 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 6,187,018 issued Sanjay-Gopal et al. ("Sanjay-Gopal"). Claims 1, 5, and 6 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 6,405,072 issued to Cosman. These rejections are respectfully traversed.

### **III. Rejections under 35 USC §102**

Claims 1 and 3-5 were rejected under 35 USC §102(b) as being anticipated by Sanjay-Gopal. Regarding this rejection, the Office Action indicates that Sanjay-Gopal discloses a position indicating means for indicating the position and direction of a surgical tool that includes a pair of laser beam emitting means, a three-dimensional position measuring means for measuring the position and direction of the surgical tool, and a control unit for controlling operation of the position indicating means and the three-dimensional position measuring means. The Office Action indicates that the position indicating means and three-dimensional position measuring means of Sanjay-Gopal are fixed on an elongated head so that the relative positional relationship between them is constant. Furthermore, the direction for the surgical tool is indicated as being provided in the form of an intersection line.

Similarly, the Office Action alleges that Cosman discloses all of these same features.

Applicants respectfully disagree.

As amended, independent claim 1 defines a position measuring apparatus for surgery that comprises:

a position indicating means for indicating a position and a direction of a surgical tool, said position indicating means comprising a pair of laser beam emitting means for emitting respective laser beams that intersect in a plane-like manner towards a surgical field;

a three-dimensional position measuring means for measuring a position and a direction of said surgical field and also the position and the direction of said surgical tool;

means for calculating setting position and direction of said laser emitting means from the emit angle of the laser beam and a laser beam emitting position that is measured by said three-dimensional position measuring means; and

a control unit for controlling operation of said position indicating means and said three-dimensional position measuring means,

wherein said position indicating means and said three-dimensional position measuring means being fixed on a common base, so that relative positional relationship therebetween is constant; and

wherein said direction for said surgical tool is given in a form of an intersection line.

The position measuring apparatus of independent claim 1 includes a position indicating means for indicating the position and direction of a surgical tool, and which includes a pair of laser beam emitting means for emitting respective laser beams that intersect in a plane-like manner towards a surgical tool. A three-dimensional position measuring means is used to measure the position and direction of the surgical field as well as the position and direction of the surgical tool. A means is provided for calculating setting position and direction of the laser emitting means from the emit

angle of the laser beam and a laser beam emitting position that is measured by the three-dimensional position measuring means. A control unit is provided for controlling operation of the position indicating means and the three-dimensional position measuring means. According to independent claim 1, the position indicating means and the three-dimensional position measuring means are fixed on a common base, so that the relative positional relationship between them is constant, and the direction for the surgical tool is given in the form of an intersection line.

Contrary to the assertions made in the Office Action, Sanjay-Gopal fails to disclose all of the features recited in independent claim 1. Sanjay-Gopal appears to disclose a detector unit for an image guided surgery system that includes an adjustable stand on which multiple receivers are mounted so that the detector unit has a predefined field of view for detecting radiant energy. As least one light source is mounted to the adjustable stand in a fixed relation to the receivers, and projects visible light in a predetermined pattern in order to mark the location of the field of view. There appears to be no disclosure for calculating the setting position and direction of the laser emitting means from the emit angle of the laser beam, nor is there any disclosure for the laser beam emitting position being measured by the three-dimensional position measuring means. Sanjay-Gopal also appears to be completely silent on the position indicating means and the three-dimensional position measuring means being fixed on a common base.

Cosman discloses a system for positioning and repositioning a portion of a patient's body with respect to a treatment or imaging machine that includes multiple cameras to view the body as well as the machine. Light-emitting index markers are identified and located by the cameras in a 3D space. The index markers can be in a determinable relationship to analogous markers used during previous image

scanning of the patient. Movements of the patient are based on comparative analysis of imaging determined anatomical targets relative to reference points on treatment or diagnostic apparatus. Cosman appears to be completely silent on calculation of a setting position and direction of a laser emitting means from the emit angle of the laser beam, as well as a laser beam emitting position that is measured by the three-dimensional position measuring means. Cosman also appears to be silent on providing the position indicating means and the three-dimensional position measuring means such that they are fixed on a common base so that the relative positional relationship remains constant. Accordingly, all of the cited references fail to provide any disclosure or suggestion for features recited in independent claim 1, such as:

means for calculating setting position and direction of said laser emitting means from the emit angle of the laser beam and a laser beam emitting position that is measured by said three-dimensional position measuring means; and

a control unit for controlling operation of said position indicating means and said three-dimensional position measuring means,

wherein said position indicating means and said three-dimensional position measuring means being fixed on a common base, so that relative positional relationship therebetween is constant;

It is therefore respectfully submitted that independent claim 1 is allowable over the art of record.

Claims 3-5 depend from independent claim 1, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 1. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

**IV. Conclusion**


For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a Notice of Allowance is believed in order, and courteously solicited.

If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

**AUTHORIZATION**

Applicants request any shortage or excess in fees in connection with the filing of this paper, including extension of time fees, and for which no other form of payment is offered, be charged or credited to Deposit Account No. 01-2135 (Case: 520.43276X00).

Respectfully submitted,  
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